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Abstract

Tipping is a multi-billion dollar phenomenon and a major source of income for millions of workers. The results of a study conducted in the US and Israel suggest that people tip mainly to show gratitude, conform to the social norm, and because they know that waiters' income depends on tips. Tipping is motivated more by the positive consequences of tipping than by the negative results of not tipping. Patronage frequency and dining alone have no systematic effects on the level of tips or their sensitivity to service quality. Respondents report tipping much more for excellent service than for poor service, suggesting that tipping can provide significant incentives for high-quality service. A large majority prefers tipping to service charges.

Keywords: tipping; social norms; cross-cultural differences

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1. Introduction

Tipping is a phenomenon that has been studied by psychologists for many years, and recently also by economists. The magnitude of tips is very large – in the US, for example, tips in the food industry alone amount to about $44 billion each year (Azar and Tobol, in press), and tips are given in many other establishments and countries. Millions of workers in the US derive most of their income from tips (Wessels, 1997), tipping is prevalent in numerous countries and occupations (Star, 1988), and tipping is related to various areas in economics and management (Azar, 2003). These are all good reasons to study tipping, but it is clear that tipping has created much interest also because it is puzzling from a theoretical perspective. The common assumption in economics that people maximize utility (which is derived by consuming various goods) subject to a budget constraint implies that people should give up money only when they receive something in return. This is not the case, however, when people tip: service has already been provided by the time the tip is given, and so the tip is a voluntary payment that does not buy something real (such as improved service) in return. Better understanding of the reasons for tipping can contribute to our knowledge not only about tipping, but also about other economic behaviors that result from social and psychological motivations, such as donations and gift giving.

Several studies attempted to understand why people tip and what affects tipping behavior. Common methodologies used in the literature involve interviewing of customers as they leave a restaurant (e.g., Lynn and Grassman, 1990; Bodvarsson and Gibson, 1994); examining the effect that a certain behavior of the service provider has on tips (e.g., Leodoro and Lynn, 2007; Seiter, 2007; Seiter and Dutson, 2007); and using theoretical models (e.g., Ruffle, 1999; Azar, 2004a; Azar, 2007a).[1]

[1] These are some of the main methodologies used, but additional types of tipping studies also exist, e.g., using lab experiments to study tipping (see for example Ruffle, 1998).

The current article uses a survey combined with an experiment[2], conducted in the US and Israel, to better understand why people tip and what affects the level of tipping, and to address a few additional questions related to tipping. The survey examines whether people tip; their reasons for tipping; their preference between tips and a compulsory service charge; how are their tips affected by service quality, patronage frequency, and whether they dine alone or with a friend; and why do people tip more for better service. The results suggest that people tip mainly to show gratitude, to conform to the social norm, and because they know that waiters' income depends on tips. Patronage frequency and dining alone have no systematic effects on tips or their sensitivity to service quality. Service quality has a large impact on tips, and a large majority prefers tipping to service charges. Because the article deals with several different aspects of tipping, it is more convenient and effective to review the relevant literature about each aspect in the section that analyzes it than to introduce all these issues here.[3]

The rest of the article is organized as follows: Section 2 describes the data, and the following section analyzes what are the reasons for tipping. Section 4 examines what affects tipping and how much people tip on average. The next section discusses the sensitivity of tips to service quality. Section 6 examines whether people prefer tipping or fixed-percentage service charges, and the last section concludes.

[2] One of the questions (see question 4 in the Appendix) was designed as a between-subjects experiment with various treatments, in order to examine the effects on tipping behavior of patronage frequency and of dining alone or with a friend.

[3] For literature reviews of various aspects of tipping, see Lynn (2006a) and Azar (2007b; 2007c).

2. The Data

In order to gain insights about tipping motivations and behavior, the survey included in the Appendix was given to 369 subjects, yielding 359 usable responses.[4] Most of the questionnaire is identical for all subjects, with a few qualifications. First, because the survey was conducted both in the US and in Israel, it was given in two languages (English and Hebrew).[5] In the Hebrew version, the word "US" in the third answer to question 2 became "Israel" and the bill became 50 Shekels rather than $10 ($1 was equal about 4.4 Shekels when the experiment was conducted in Israel). Second, the purpose of question 3 is to examine whether people prefer service charges (at the level of the normal tip) to discretionary tipping; because in Israel the norm about restaurant tipping is lower than in the US (12% versus 15%), the Hebrew version of the questionnaire used 12% instead of 15% in question 3. Third, question 5 was added only after 66 US questionnaires (65 of which were useable) were collected, so the sample size in the parts that use question 5 is smaller. Finally, question 4 is designed as a between-subjects experiment, and therefore it is different for various subjects. In particular, it used a 2X3 design, where the dining experience was described as dining either alone or with a friend, and the frequency of dining at the restaurant was described as weekly, monthly, or a one-time visit. The assignment of subjects to the six resulting treatments was random. Of the 359 observations, 118 are of US students at Northwestern University, 179 are of Israeli students at Ben-Gurion University of the Negev, and 62 are of young Israelis off-campus.[6]

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[4] Nine subjects did not fill question 4 at all or not fully, so much of the analysis cannot be done with their data. One subject answered "no" to question 1, meaning that he does not tip at restaurants, so the rest of his questionnaire is irrelevant to understanding tipping behavior.

[5] Other studies exploring differences between populations with respect to tipping include Lynn and Thomas-Haysbert (2003), Lynn (2004a), and Lynn (2006b).

[6] The samples of Israeli students and Israeli non-students were compared and the hypothesis that the answers come from the same distribution could not be rejected at the 10% level of significance for any question other than the fourth possible

3. Reasons for Tipping

The clearest result of the survey is that virtually everyone tips, both in the US and in Israel. Out of 369 questionnaires handed, only 1 person answered question 1 negatively.[7] Given that virtually everyone tips and that tipping after the service has been provided cannot improve the service, the natural question is why people tip. While this question was addressed in the literature before (see for example Lynn and Grassman, 1990; Azar, 2004a; Azar, 2007a), question 2 in the survey addresses it in an innovative way by asking the respondents to indicate which of 7 possible reasons motivates them to tip (allowing them to choose all the reasons that apply to them), rather than by trying to infer the answer from their tipping behavior or from theoretical models. Table 1 presents the reasons respondents gave for the question why they tip (question 2 in the Appendix).

[Table 1 here]

The results offer several interesting observations. First, the number of reasons for tipping given by Israeli respondents is much smaller than the number given by American respondents (1.98 vs. 3.42, p-value of the t-test for difference in means < 0.0001). In the US, the most common reason for tipping was that respondents considered it to be the social norm, followed by their desire to show their gratitude for the service provided, awareness that waiters depend on tips as a source of income, and a fear to feel guilty or embarrassed if they do not tip. In Israel, these are also the five most common reasons for tipping, but with fewer people indicating each of these reasons (except for showing gratitude), and showing gratitude rather than conforming to the social norm is the most important reason in motivating tipping.

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answer to question 2 ("By tipping I can show the waiter my gratitude for his service"). Consequently, the two Israeli samples are combined in the analysis.

[7] In fact, even this person gave positive answers in question 4, making it unclear whether he does or does not tip. Because of the doubt, as explained in a previous footnote, he was not included in the rest of the analysis.

The significant percentage of people who tip because they know that waiters receive low wages suggests that people sometimes tend to take actions to fill gaps created by others. Here, people tip to increase the low wages paid to waiters by their employers. In other contexts, non-for-profit organizations or private donors identify needs that are not supported enough (or at all) by the government or other institutions (e.g., in helping the poor, funding museums and universities, etc.) and contribute to them. The significance of the low wages of waiters in motivating tipping reinforces a related finding by Azar (2005a). In a study that examined in which service occupations tipping became a social norm, Azar found that tipping prevalence was negatively correlated with the worker's income.

One interesting division of the reasons for tipping is the one between reasons that are consistent with the neo-classical economic consumer (let us refer to him as "Homo Economicus") and those that are not. Homo Economicus does not have any feelings, he is selfish, and he simply tries to maximize his utility, which only depends on his consumption. Therefore, Homo Economicus never spends money unless he receives something real in exchange for it. He therefore should not tip in order to avoid feeling guilty or embarrassed, to conform to the social norm, to show gratitude or to increase someone else's income (reasons 1-5).[8] He might tip, however, in order to improve the service he receives on his next visit to the restaurant (better service is something real). It is arguable whether Homo Economicus might tip to avoid being yelled at. It is not clear that Homo Economicus experiences any negative utility when being yelled at, but he might think the fight with the waiter is going to waste his time, and a loss of time is a real loss.

[8] This view of Homo Economicus, while it may seem extreme to psychologists, is the common model of the economic agent, especially until the last decade or two. In recent years the burgeoning field of behavioral economics relaxes some of the traditional assumptions about the economic agent, and acknowledges that people also care about social norms, fairness, etc. If we allow the economic agent to derive utility from conforming to the social norm, then tipping because it is a social norm is consistent with an economic agent.

We can see that for both Americans and Israelis, the two reasons that may drive even Homo Economicus to tip are in fact the least important reasons for tipping, far behind the other reasons. This means that while people have various reasons why they tip, almost no one tips because of reasons that are consistent with the assumptions of most economics models. We have to incorporate psychological motivations such as the desire to conform to the social norm or to show gratitude in order to explain tipping (on this observation see also Azar, 2007a; Azar, 2007b).

Another interesting exercise is to divide the reasons for tipping to positive (good outcomes that happen when one tips) and negative (bad outcomes that happen when one does not tip). Positive reasons include conforming to the social norm, showing gratitude, and supplementing the waiters' income (reasons 3-5). Negative reasons include feeling guilty or embarrassed, receiving bad service in the future, or being yelled at, when not tipping (reasons 1, 2, 6 and 7). Interestingly, the three positive reasons are the most important reasons for tipping both in the US and in Israel. That is, people tip more because of the positive outcomes they experience if they tip, than because of negative consequences of not tipping.

This is an important observation. In many countries tipping is replaced with fixed-percentage service charges, and in the US this is often the case in restaurants for large groups (e.g., six or more diners).[9] Whether customers are better off with tipping or with a service charge depends to a large extent on the reasons why they tip. If they tip because of negative consequences of not tipping, then replacing tipping with service charges causes no harm, because people do not experience these negative outcomes (e.g. feeling guilty) if they do not tip when tipping is no longer required. On the other hand, if people tip because tipping results in positive outcomes, replacing tips with service charges eliminates this source of positive outcomes, possibly reducing social welfare. For example, if people have positive psychological utility when they tip because it allows them to show their gratitude, replacing tipping with service charges eliminates this source of positive utility because

[9] In the US it is usually called "gratuity" rather than "service charge."

paying a compulsory service charge no longer expresses any gratitude as a voluntary tip does. Because tipping is motivated mostly by positive reasons, this suggests that customers might prefer tipping to service charges. We will see later that this is indeed what most respondents indicated in question 3.

Interestingly, Israelis exhibit this tendency to indicate positive reasons more than negative reasons even more than Americans do. We can see this if we examine the ratio between the percentage of Americans and that of Israelis indicating each reason for tipping. This ratio is bigger than 1 for almost all the reasons (except for reason 4 – showing gratitude), but it is particularly large for the negative reasons. Aggregating over the various reasons, in the US each positive (negative) reason was chosen, on average, by 73.1% (30.5%) of the respondents, a ratio of 2.40 between positive and negative reasons. In Israel, each positive (negative) reason was chosen, on average, by 53.1% (9.8%) of the respondents, a ratio of 5.45.

4. How Much Do People Tip and What Affects Tips?

Question 4 was designed as an experiment that explores how service quality, patronage frequency, and dining alone, affect tipping behavior. Subjects were asked to write how much they would tip for quality levels ranging from 1 (poor service) to 5 (excellent service). The design was a 3X2 between-subjects design (i.e., each subject only answers one of the six possible treatments), where one dimension of treatments was whether the subject was told to imagine dining alone or dining with a friend, and the second dimension was whether he was told that he visits this restaurant only once, monthly, or weekly.

To be able to compare the US and Israeli samples, the answers respondents gave to question 4 were converted to percentage tips. In addition, the variable AVGTIP was defined as the average percentage tip of the respondent (average of his responses to the five quality levels; an average tip of 15% is coded as AVGTIP = 15, not 0.15). A few respondents reported tips that are extremely high, and including them in the sample can change the estimated effect of different variables significantly according to the specific treatments to which these respondents belonged (in terms of patronage

frequency and dining alone or not), where the reason for the extreme value of AVGTIP is the personality of the respondent and not the treatment (for example one of these extreme observations came from a respondent who wrote that she was a waitress, even though she was not asked to indicate such personal information). To avoid a bias caused by these outliers, the 4 observations with the highest value of AVGTIP were excluded from the analysis (including the averages reported in Table 2) where responses to question 4 are used.[10] The average tips in the various treatments are presented in Table 2. One clear result is that tip percentages in Israel are smaller than in the US. This reflects the fact that the norm in Israel is to tip a smaller percentage of the bill compared to the norm in the US. The rest of the results are discussed in the following subsections.

[Table 2 here]

4.1. Patronage Frequency

The effect of patronage frequency on average tips is still unclear, although it was analyzed in several studies. Lynn and Grassman (1990), Lynn and McCall (2000) and Conlin, Lynn and O'Donoghue (2003) found significant and positive correlation between patronage frequency and tip size (i.e., customers who visit the specific restaurant more frequently tip more on average). Bodvarsson and Gibson (1997) found that regular customers (who patronized the restaurant at least once a month) tip more than non-regular patrons, but in only two of the seven restaurants in their sample the difference was statistically significant. On average, regular patrons tipped 1.05 percents (of the bill size) more than others.

Other studies, however, did not obtain the result that frequent customers tip more. Kahneman, Knetsch and Thaler (1986), for example, interviewed people over the phone with two alternative questions (between subjects). One question was "If the service is satisfactory, how much of a tip do

[10] Of the 359 usable responses, 355 had AVGTIP below 32%, and four had AVGTIP above 48%, so it was reasonable to put the upper boundary between 32% and 48%. In addition, one subject did not answer question 3 and is therefore omitted from the analysis when question 3 is involved.

you think most people leave after ordering a meal costing $10 in a restaurant that they visit frequently?" (N = 122) and the other question started the same but ended "… in a restaurant on a trip to another city that they do not expect to visit again?" (N = 124). The mean responses were $1.28 and $1.27, indicating that repeated customers do not tip significantly more than non-repeated customers. Bodvarsson and Gibson (1999) conducted a survey in which people were asked how much they tip for poor, satisfactory, or very good service. They classified respondents as regular diners if they indicated dining in sit-down and be served restaurants more than twice a month, and as non-regular otherwise. In the various treatments, samples, and quality levels, regular diners sometimes tipped more and sometimes less than non-regular diners, with the difference being almost always statistically insignificant.

There are two possible reasons why frequent customers might want to tip more than others. First, if they think the waiter will reciprocate to generous tips in their future visits, they might tip more in order to receive better service in the future. Second, in their future visits they might encounter the same waiter, feel good if they tipped generously today, and feel uncomfortable if they tipped poorly.

Nevertheless, the finding of some of the studies mentioned above of a positive correlation between patronage frequency and tip size, I believe, might be the result of an omitted variable, the tipper's income. It is likely that higher-income diners eat at restaurants more often, and it is also reasonable that they tip more. Consequently, if the tipper's income is not included in the regression, as is usually the case, it will look like patronage frequency itself increases tips. This might explain why Kahneman, Knetsch and Thaler (1986) did not obtain an effect of patronage frequency on tips. Whether respondents in their survey were given the one-time or the frequent-visit treatment was random and therefore was not correlated with the respondent's income. Additional support for the argument that not controlling for income might drive the positive correlation between patronage frequency and tips can be found in Parrett (2003): he controls for the respondent's income, and finds out that the effect of patronage frequency on tips, while being positive, is statistically insignificant (p-value = 0.44). He also finds that higher income of the tipper increases tips (p-value < 0.001). In a study that attempts to

understand why tipping became the norm in some occupations but not in others, Azar (2005a) found that the existence of tipping in a service occupation is positively correlated with the consumers' income.

The survey reported here is not susceptible to the confounding effect of the tipper's income, because the assignment of a subject to the one-time, monthly, or weekly visit treatment is random and thus independent of the respondent's income. Consequently, the results can shed light on whether patronage frequency affects tips. Examining the bottom part of Table 2, we can see that in the US sample tipping percentages are similar across patronage frequency treatments, and in fact, tips are higher in the one-time visit treatment. In the Israeli sample, the results in the different treatments are a little less similar, but not in any systematic manner: in the monthly-visit treatment tips are higher than in the one-time and weekly treatments, although in terms of patronage frequency, the monthly-visit treatment is in between the other two.

Another way to examine the effect of patronage frequency on average tips is to use regression analysis. Table 3 defines the variables used in the regressions, and Table 4 presents the results of various regressions in which the average tip is regressed on different variables.

[Tables 3 and 4 here]

The regressions show that the conclusions drawn before about the effect of WEEKLY and MONTHLY on AVGTIP are robust even when we add other explanatory variables. We can see that in the US sample and in the combined sample there is no statistically significant effect of patronage frequency (the dummy variables MONTHLY and WEEKLY) in any specification. In the US sample the small and insignificant effect is that frequent patrons tip less - in the opposite direction to the effect obtained in several other studies discussed above. In the Israeli sample, there is a statistically significant positive effect of MONTHLY (at the 5% level in one specification and the 10% level in another specification). However, if there had been a true positive correlation between patronage frequency and tips, WEEKLY should have been higher than MONTHLY. Not only this is not the case, but also WEEKLY is in fact negative, meaning that one-time customers tip more than those who

visit the restaurant weekly (although this is statistically insignificant). This suggests that the positive coefficient of MONTHLY is probably a matter of chance and does not reflect a true positive correlation between patronage frequency and tips. Consequently, the results support the argument that the positive correlation between patronage frequency and tips obtained in previous studies might be the result of an omitted income variable.

The results also suggest that the possible reasons mentioned above why frequent patrons might want to tip more do not seem to actually play a role in tipping behavior. That is, people do not tip because they believe that the waiter will reciprocate and provide them better service in the future; and also they do not tip in order to feel more comfortable if they meet the same waiter in the future. An implication of the results is that the waiter has no reason to invest in repeating customers more than in one-time customers in order to increase his tips.[11] The restaurant's manager, on the other hand, is not going to earn additional profits from one-time customers, but will or will not earn additional profits from repeating customers depending on how much they visit the restaurant in the future, which in turn depends on their satisfaction from service.[12] This implies that the manager might have to give the waiters an incentive to nurture the repeating customers more, because tips alone are not providing incentives for this discrimination in favor of repeating customers.

4.2. Dining Alone vs. Dining with a Friend

Another dimension of treatments in the experiment is whether the respondent is being told that he dines alone or with a friend. The effect of group size on tips has been examined by several previous studies, with mixed results. Freeman et al. (1975) found a negative correlation between group size and

[11] In fact, what the waiter should do depends on the sensitivity of tips to service quality and not on the average tip, but for simplicity I assume here that when tips are higher on average they are also more sensitive to service quality.

[12] One could argue that one-time customers (e.g., tourists) might recommend the restaurant to others and thus bring additional business. However, the same is true for repeating customers, and because they often live in the area, they are even more likely than one-time customers to bring additional business by recommending the restaurant to others.

tips, claiming that the findings are consistent with a theory of diffusion of responsibility. Snyder (1976), however, claims that the explanation might be that customers take into account that it is easier to serve a large group than to serve the same number of people in separate tables, therefore tipping less when they are in a large group. Lynn and Grassman (1990) found no correlation between group size and tipping. Bodvarsson and Gibson (1997) found that the differences in tip percentage between tables of two, three and four diners are not significant, but that lone diners tip more than others. In another study (Bodvarsson and Gibson, 1999), they report that people say they tip a higher percentage when dining alone than when dining with a friend. Conlin, Lynn and O'Donoghue (2003), however, report that percentage tip in their data is positively correlated with group size.

Examining the coefficient of ALONE, we can see that in the various regressions it is always very close to zero and not statistically significant at any conventional level, implying that people tip similarly when they dine alone or with a friend. This suggests that a desire to impress others at the table or social pressure of other diners does not seem to be an important motivation for tipping. While the tipper may feel a pressure to tip because this is the social norm, the pressure is similar whether or not there are other diners at the table.

Assuming that it is easier to serve a certain number of diners at one table than the same number in several tables (e.g., because it requires fewer trips to the table or because explaining the menu items can be done once per table regardless of the number of diners, etc.), the result of similar percentage tips implies that waiters should prefer to serve tables with more diners. The restaurant's management can take advantage of this by using the assignment of waiters to tables as an incentive mechanism. For example, dividing the restaurant to areas with small and large tables, and letting the waiters who performed particularly well in the past month to serve the area with the larger tables.

The results are consistent with the explanation of Lynn and Bond (1992) to the negative correlation between group size and tip percent. Lynn and Bond argue that the negative relationship between group size and percent tip is due to confounding with bill size, which is caused by a positive intercept in the relationship between dollar tip and bill size. In the survey reported here, the bill size

for which the tip should be left is constant regardless of the group size, and therefore no negative correlation between tip percent and group size is expected according to Lynn and Bond – in accordance with the results.

4.3. Another Look at the Seven Reasons for Tipping

The regressions reported in Table 4 also let us analyze the seven reasons for tipping from another perspective: we can examine the correlation between what people say motivates them to tip and the amount they tip. The coefficient of REASONS-TIPPING is positive and in the Israeli and the combined samples also statistically significant at the 5% and 1% levels, respectively. In the combined sample each additional reason for tipping indicated by the respondent increases AVGTIP, on average, by about 0.53% of the bill.

We can also examine the different reasons separately. Looking at the 3 regressions in the right side of Table 4, we can see that in the US, a person indicating that tipping being a social norm motivates him to tip, tips on average 2.16% of the bill more than others, and those who tip to show their gratitude tip 1.82% more than others (both coefficients are statistically different from zero at the 10% significance level). The effect of other reasons is smaller in size and not statistically significant.

In the Israeli sample the only two reasons that have a statistically significant effect on tips are showing gratitude (which adds 1.13% to the tip and is statistically significant at the 10% level) and the awareness that waiters earn low wages and depend on tips to supplement their income (which adds 1.98% to the tip and is significant at the 1% level). In the combined sample, these are again the only two reasons with a statistically significant effect (at the 5% level); showing gratitude increases tips by 1.33% and supplementing waiters' low income increases tips by 1.26%. It is interesting that the three reasons that have a statistically significant effect on tips in at least one of the three samples are also the reasons that were chosen most frequently. This gives additional support for the view that these are the most important reasons in motivating tipping. Also, notice that these are the reasons that we

identified as being related to positive outcomes of tipping rather than to negative outcomes of not tipping.

5. Sensitivity of Tips to Service Quality

One of the most important questions about tipping behavior is to what extent tips are sensitive to service quality. The importance of this issue stems from the fact that tipping provides incentives for workers to give better service only if tips are an increasing function of service quality. If people tip similarly regardless of service quality, workers have no incentive to exert effort to provide excellent service (Azar, in press a), and the main justification why tipping is a welfare-improving social norm collapses (Azar, 2005b).

The importance of this issue has led several scholars to address it. Lynn and McCall (2000), in a meta analysis on the service quality effect, found statistically significant and positive relationship between service evaluations and tip sizes; the effect of service on tips was small, however, accounting for less than two percents of the variability in tip percentages.[13] Conlin, Lynn and O'Donoghue (2003) found that each extra point on a service measure scale of 1-5 increases the tip percentage by 1.46. This service measure consists of four different characteristics of the waiter (ranked by the customers): appearance, knowledge, friendliness, speed of service and attentiveness.

Bodvarsson and Gibson (1997) found positive correlation between service quality and tip size in five out of seven restaurants (in three the correlation was statistically significant), but negative correlation in two restaurants. Combining the results from all restaurants, those who valued the service as 5/5 tipped 0.44% of the bill size more than those who ranked the service as lower (usually 4/5). Lynn and Simons (2000) interviewed waiters about their characteristics and examined their tip earnings in lunches and dinners, and found that better service providers can earn higher tips in

[13] They mention, however, that in the studies that used customer ratings of service on multi-item scales (which are more valid and reliable), this number approached 5%.

evenings but not at lunch. Schwer and Daneshvary (2000) examined tipping in beauty salons and found mixed results concerning the relationship between service quality and tips, all of which were also not statistically significant at the 10% level. Azar (in press a) presents the tipping – service puzzle: service ratings are relatively high despite the small sensitivity of tips to service quality.

While Bodvarsson and Gibson (1997) and Lynn and McCall (2000) imply that service affects tips very little, several other studies suggest that service quality is a major determinant of tips. Bodvarsson, Luksetich and McDermott (2003), for example, found a strong relationship between service quality and tip size (see also Lynn, 2004b and Bodvarsson, 2005 for a debate about the methodology used in this study). Lynn (2001) reports about a national survey, in which 54.5% of respondents claimed that the best explanation for why they do or do not tip restaurant waiters had to do with the quality of the service received. No other explanation was close to this level of endorsement.

Bodvarsson and Gibson (1999) present the results of a survey conducted in two universities: in St. Cloud State University in Minnesota students said that they would tip 6, 13.1 and 19.1 percent for poor, satisfactory and very good service.[14] In the University of Lethbridge in Alberta the numbers were 3.7, 11.4 and 18.4 percent.[15] Is the large sensitivity of tips to service quality they find a robust result that can be replicated in other surveys? And if so, why is it so different from the results of studies that interview diners as they leave a restaurant? The survey reported here can help us answer at least the first question.

To proceed, let us first define several variables. TIP_q, for q = 1…5, is the percentage tip for quality level q. STD is the standard deviation of (TIP_1, TIP_2, TIP_3, TIP_4, TIP_5). RANGE is the range between the tips given for the best and worst service, i.e. RANGE = TIP_5 – TIP_1. STD and RANGE measure how sensitive are the tips of each respondent to service quality. Arguably, a respondent who tips 16, 17, 18, 19 and 20 percent for service qualities of 1-5, is less sensitive to

[14] I report their results for "dining with a friend and a $20 bill." The other results are similar.

[15] See Lynn (2000) for a critique of Bodvarsson and Gibson's article.

service quality than one who tips 6, 7, 8, 9 and 10 percent, if we look at the relative differences rather than the absolute differences. Both STD and RANGE, however, are identical for both hypothetical respondents. In order to address this, two additional measures of sensitivity of tips to service quality were constructed by dividing STD and RANGE by AVGTIP; these two measures are denoted SCALED-STD and SCALED-RANGE. Table 5 presents the summary statistics of these variables.

[Table 5 here]

We can see that in both samples, there is a very large sensitivity of tips to service quality, with the average range between the tips for excellent and poor service being 15.8% in the US sample and 14.8% in the Israeli sample. Only 10 out of the 355 subjects reported identical tips regardless of service quality. According to the absolute measures of dispersion (STD and RANGE), there appears to be slightly more sensitivity of tips to service quality in the US, but if we think that scaling by the average tip yields a better measure of dispersion, Israelis are the ones who tip more sensitively to service quality.

These results reinforce, with a different dataset and additional countries, and with a different scale of quality levels, the results obtained by Bodvarsson and Gibson (1999) about the sensitivity of tips to service quality. The finding that in survey questions respondents indicate a high sensitivity to quality thus seems robust. The question why surveys find a significant effect of service quality on tips while studies that interview diners after actual dining experiences usually find a much smaller effect is an intriguing question that is left for future research.

Even if the results of this survey for some reason overestimate the impact of service quality on tips, they probably still suggest that this impact is larger than what it was previously considered to be. This can explain, for example, the tipping – service puzzle: if the sensitivity of tips to service quality is stronger than what it was believed to be, this can explain why service quality is high. In addition, high sensitivity of tips to service quality has important implications. It implies that waiters have significant incentives to provide good service, in order to receive higher tips. Consequently, restaurants might need to monitor waiters very little because tipping may provide sufficient incentives

to waiters to provide good service (Azar, 2004c). In addition, restaurants should not change from tipping to compulsory service charges, in order to retain the incentives that tips provide to waiters (Azar, 2004c).

Moreover, other restaurant policies that undermine the incentives that tips provide for good service are maybe more harmful than was previously thought if tips are significantly sensitive to service quality. For example, consider the practice of tip pooling, in which waiters share their tips equally among themselves. This practice has certain advantages, such as reducing the volatility of each waiter's tips over time and encouraging team work and help among the waiters (e.g., if one waiter sees that another is overloaded, he will be more willing to help him when they share their tips). However, tip pooling also reduces the incentives of waiters to provide excellent service. If each additional dollar of a waiter's tips goes to his pocket, his incentive to try hard to provide the best service he can is much stronger than if he shares this extra dollar with 20 other waiters. This problem might be minor if anyway tips are hardly affected by service quality, but if they are quite sensitive to service quality the problem becomes much more major and may outweigh the benefits of tip pooling.

To understand what drives people to tip more for better service, question 5 asks the respondents to indicate which of four reasons motivates them to do so. Table 6 presents the results.

[Table 6 here]

Of the four reasons, only one might be chosen by Homo Economicus: providing incentives to the waiter to give good service in future encounters. When the waiter understands that his tips are an increasing function of the service quality he provides, this can cause him to provide excellent service, which is something real that Homo Economicus might be willing to pay for. The other reasons, namely that it is more fair to give higher tips for better service, that doing so is the social norm, or that it allows to show gratitude in proportion to how grateful the tipper is, are all reasons that implicitly assume some kind of psychological utility (from being fair, conforming to the norm, etc.), which is not part of the utility function of Homo Economicus. It turns out that providing incentives is only third (in both the US and the Israeli samples) in explaining why people tip more for better service. This,

once again, emphasizes the strong effect of psychological and social motivations in tipping behavior. Interestingly, while tipping being the social norm is one of the main reasons for tipping in general (see Table 1), the social norm is the least important reason in motivating people to tip more for better service. The reason might be that people do not think that there is a strong norm to tip much more for excellent service than for poor service, even though etiquette books acknowledge that poor service can be punished by lower tips (Post, 1997).

[Table 7 here]

Next, it is interesting to explore what affects the sensitivity of tips to service quality. Table 7 presents several regressions addressing this question. Because in the US sample only 53 respondents received question 5, the separate regression for the US is not particularly informative, and is combined with the Israeli sample (except for one regression), allowing the variable ISRAEL to capture any differences in sensitivity to quality in the two countries (it turns out, however, that the coefficient of ISRAEL is never statistically significant).

As we can see in the regressions, most of the results are generally robust to the choice of the dependent variable, with the exception of the coefficient of AVGTIP. This exception is not surprising: when the dependent variable is STD or RANGE, it is reasonable that higher tips are associated with higher dispersion, resulting in a positive coefficient for AVGTIP. The relationship between average tips and dispersion, however, is not as strong as a linear relationship, and therefore once we divide STD and RANGE by AVGTIP and use the outcomes as the dependent variables, the coefficient of AVGTIP becomes negative.

The negative coefficient of REASONS-TIPPING suggests that people who indicated more reasons for tipping tip less sensitively to service quality. Running regressions similar to those in Table 7 but with the dependent variable being TIP_q for q = 1,…,5 reveals that the effect of REASONS-TIPPING on tips is positive for q = 1, 2, 3 and negative for q = 4, 5. This suggests that those who state more reasons for tipping feel more obligated to tip generously even if service is bad, but they also feel less strongly than others that they should increase tips when service is excellent.

Dining alone has a positive effect on the sensitivity of tips to service quality, but this effect is not statistically significant. The coefficients of MONTHLY and WEEKLY are both negative, but are not statistically significant. In addition, the coefficients of WEEKLY in the various regressions are not always larger than those of MONTHLY, so one should not infer that there is a negative relationship between patronage frequency and tipping sensitivity to service quality. It seems safe, however, to conclude that there is no positive relationship between the two. In other words, more frequent customers are not tipping more sensitively to service quality. This result is consistent with empirical studies that interview diners about their dining experience and tipping as they leave a restaurant (see Lynn and Grassman, 1990; Conlin, Lynn, and O'Donoghue, 2003; Azar, 2007a; Azar, in press b). This is an important result, because from a theoretical perspective, if tips are motivated by the desire to discipline servers in order to improve future service, frequent customers should tip more sensitively to service quality (for theoretical models showing this formally see Azar, 2007a, 2008). Therefore the coefficients of MONTHLY and WEEKLY suggest that people do not tip because of future service considerations.

The attitude about service charges is not significantly related to the sensitivity of tips to service quality; this is discussed further in the next section. Among the four reasons mentioned in question 5, we can see that providing incentives for good service in the future and showing gratitude in proportion to how grateful the respondent is, are the two reasons that seem to be positively related to the tip sensitivity. It is interesting to point out that it is not unequivocal what should be the sensitivity of tips to service quality for respondents whose reasons are fairness, showing gratitude proportionally, and the social norm, because it depends on what they consider a fair punishment for bad service, what they think the social norm is, etc. The only reason that has clear implications is providing incentives: if one wants to provide incentives to the waiter to give the best service in the future, he should give tips that

are as sensitive to service quality as possible.[16] The large and statistically significant positive coefficient of INCENTIVES is consistent with this observation and suggests that people who tip more for better service to provide incentives understand this.[17]

[Table 8 here]

Also interesting is to explore how the sensitivity of tips to service quality is affected by the reasons for tipping the respondents indicated in question 2. Table 8 presents regressions that address this issue. The effect of ALONE, MONTHLY, WEEKLY, SERVCHAR and AVGTIP is similar to their effect in the regressions in Table 7 and is discussed above. The coefficient of ISRAEL in the combined sample regressions is negative but not statistically significant. The coefficients of GUILT and EMBARRASSMENT are negative but small in magnitude and not statistically significant, and the same applies to YELLING (except for one regression where its coefficient is positive but very small).

The coefficient of NORM is negative and in all regressions except the one limited to the US sample, it is large (in comparison to the average level of the dependent variable, see Table 5) and statistically significant. This means that people who tip because tipping is the social norm, vary their tips according to service quality less than others. This may suggest that people do not think that the social norm requires to change the tip significantly for different service quality levels, a conclusion that is also supported by the finding that the social norm explanation for tipping sensitively in question 5 received the least endorsement of all four reasons mentioned in that question.

The coefficient of GRATITUDE is positive and in all regressions except the US one, it is large and statistically significant. This suggests that people who tip to show their gratitude tip more

[16] This does not mean an infinite sensitivity, however, because when one tips for excellent service he has a trade-off between providing more incentives by tipping more and saving money by tipping less; and when tipping for poor service, he cannot tip less than zero.

[17] This does not contradict the earlier result that patronage frequency does not affect tipping sensitivity to service quality. These two results suggest that the majority of people do not tip to provide incentives for future service, but the few that do, understand that a large tipping sensitivity is required to affect future service.

sensitively to service quality than others. This makes sense, because people are probably much more grateful when receiving good service than when receiving bad service, and therefore tipping to show gratitude results in a significant sensitivity of tips to service quality. This observation is reinforced by the finding that the gratitude reason in question 5 is the most popular choice in the US and the second most popular in Israel.

The coefficient of WAITERS-DEPEND is negative and almost always large and statistically significant. This finding is reasonable: the waiter depends on tips to supplement his low wage even when he provides poor service, and therefore a tipper who is significantly motivated by this reason might vary his tips based on service quality relatively little. The coefficient of FUTURE-SERVICE is large and positive, but usually not statistically significant (maybe because of the small number of observations in which this reason was chosen). The positive coefficient makes sense: people who tip to improve future service should provide incentives for good service by tipping sensitively to service quality. This is also in line with the positive coefficient on INCENTIVES in the regressions reported in Table 7.

6. Preference between Tipping and Fixed-Percentage Service Charges

One of the interesting issues about tipping that has hardly received any treatment in the literature is the change in many European countries from tipping to service charges (see for example Star, 1988). While tipping originated in Europe and only later moved to the US (see Segrave, 1998; Azar, 2004b), over the years in many European countries a fixed-percentage service charge has replaced tipping.[18] In fact, even in the US, many restaurants impose a fixed-percentage service charge (usually 15-20% of the bill), called "gratuity," on large groups (often 6-8 diners or more). In Israel restaurants

[18] In some countries where service charges are imposed it is still common to round up the bill, which essentially adds a tip to the service charge; tips in these cases, however, are much lower than those common in countries where service charges are not added to the bill (Star, 1988).

usually do not use different policy for large groups, but several restaurants have replaced tipping with fixed-percentage service charges. An important and interesting question is therefore which arrangement consumers prefer: tipping or service charges.

This question has implications, for example, for restaurant managers who have to choose a policy for their restaurant: only service charges, only tipping, or tipping for small groups and service charges for larger groups. It also has certain policy implications. Policymakers have to decide whether tips are counted toward the minimum wage requirement or not. That is, should the employer pay the worker the minimum wage even if the worker receives tips?[19] It is reasonable to expect that a law that requires minimum wages to be paid in addition to tips will encourage restaurants to move from tipping to service charges. The reason is that by charging service charges the restaurants can use them to pay the waiters' wages, while tips cannot be used in this manner (if a law requires to pay minimum wages regardless of the tips the worker receives). Consequently, whether customers prefer tipping or service charges suggests whether a requirement to pay minimum wages in addition to tips, leading to more establishments choosing service charges, is going to have an important negative (or positive) effect on social welfare.

Question 3 in the survey addresses the preference between service charges and tipping by asking the respondents "Do you prefer that the restaurant will add a service charge of 15% to the bill instead of tipping?" letting them choose between "Yes," "No," or "I am indifferent between the two." Because in Israel the norm about restaurant tipping is lower than in the US (12% versus 15%), the Hebrew version of the questionnaire used 12% instead of 15% in question 3. Table 9 presents the responses to this question.

[Table 9 here]

[19] Federal minimum wage laws in the United States dictate that a tipped worker can be paid a wage of $2.13 an hour compared to $5.15 minimum wage of a non-tipped worker. The total income of a tipped worker from tips and wages, however, has to be at least $5.15 an hour. Several states adopted state laws that are different from the federal laws. In Israel, court decisions ruled that minimum wage should be paid in addition to tips, but this is not a common practice yet.

We can see that in both samples the majority wants to retain tipping, with the rest being divided about equally between preferring service charges or being indifferent between the two options. In Israel the preference for tipping is stronger: for each respondent who prefers service charges, there are 5.1 respondents who prefer tipping; in the US this ratio is 3.2. Notice that this is despite the fact that in Israel question 3 used 12% instead of 15%. If we had used a service charge of 15% in question 3 in the Hebrew version, probably even more respondent would have preferred tipping to service charges. The stronger preference for tipping in Israel is also interesting in light of the result that in the US the average respondent in fact indicated more reasons for tipping than his Israeli counterpart (see Table 1).

Notice that most people prefer tipping to service charges even though they tip more than the service charges mentioned in question 3 for service quality of 4 or 5 (see Table 5), and even for average service quality (see Table 2).[20] The strong preference for tipping over service charges therefore implies that European establishments that replace tipping with service charges, as well as US restaurants that impose a fixed-percentage gratuity on large groups, might reduce their customers' welfare, even though what they collect in these service charges or gratuities is possibly smaller than what their customers would otherwise leave as voluntary tips. In addition, the results also imply that to the extent that requiring employers to pay minimum wages in addition to tips will result in tipping being replaced with service charges, customers' welfare may be hurt.

To further explore preferences between tipping and service charges, a few regressions in which this preference is the dependent variable were estimated. In one regression the dependent variable is SERVCHAR, which is equal to 1 if the respondent prefers service charges, to -1 if he prefers tipping, and to 0 if he is indifferent. This implicitly assumes that being indifferent can be considered as being half-way between preferring tipping and preferring service charges, an assumption that seems

[20] Previous research indicates that people usually rank service quality as being 4 or 5 on a 1-5 scale (see for example Bodvarsson and Gibson, 1994; Conlin, Lynn, and O'Donoghue, 2003).

reasonable. To test whether the results are robust, I also created another variable, SERVDUMMY, which is equal to 1 if the respondent prefers service charges and to 0 if he prefers tipping; indifferent respondents are excluded from the analysis. Both a linear probability model (LPM) and a probit model were estimated with SERVDUMMY as the dependent variable.[21] The results in all the regressions are qualitatively similar and are presented in Table 10.[22]

[Table 10 here]

There are several interesting questions to explore about the preference between service charges and tipping. One question is whether people who tip more on average are more willing to replace tipping with service charges (because they will save more money due to this change compared to others). If this were the case, we should observe a large and significant positive coefficient of

[21] If we define another variable, SC, which is equal to 1 if service charges are preferred, to 0 if tipping is preferred, and to 0.5 if the respondent is indifferent, we obtain coefficients that are exactly half of those reported when the dependent variable is SERVCHAR (except for the constant), with the same t-values (because we simply divide the dependent variable by two and add to it a constant of a half). The OLS regression in which SERVDUMMY is the dependent variable, however, drops the observations where the subject is indifferent, and therefore has different results. Notice that if we think of an indifferent person as one whose probability to prefer service charges to tipping is 50%, the coefficients in the regressions with SERVCHAR as the dependent variable can be thought of as twice the marginal effect of the independent variables on the probability that a person prefers service charges.

[22] Using AVGTIP and SCALED-STD in the regression allows to examine the relationship between these variables and the preference between tipping and service charges. There is a potential problem, however, in comparing these variables across respondents, because different respondents answered different treatments in terms of patronage frequency and dining alone or with a friend. This can be a problem if patronage frequency and dining alone have a large effect on tipping behavior, but as we saw earlier, they do not. To verify the magnitude of the treatment effect on AVGTIP and SCALED-STD, I regressed these two variables on the treatment variables (MONTHLY, WEEKLY, and ALONE) and a constant. In the regression of AVGTIP, the R^2 is 0.004 in the US and 0.026 in Israel. In the regression of SCALED-STD, the R^2 is 0.008 in the US and 0.031 in Israel. These results confirm that the treatment variables have a negligible effect on AVGTIP and SCALED-STD, and consequently, that comparing AVGTIP and SCALED-STD across respondents indeed reflects for the most part their personal tipping behavior and not their treatment.

AVGTIP. It is easy to see that this is not the case. The coefficient is often negative, and even when it is positive (e.g., in the Israeli sample), it is small and statistically insignificant.

Another question is whether people whose tips are more sensitive to service quality want to retain tipping more than others. Because service charges are a fixed-percentage of the bill regardless of service quality, they eliminate the customer's ability to reward the waiter based on service quality. For those who tip more sensitively to service quality, this should be a bigger concern. So if the main reason people prefer tipping to service charges is that it allows them to determine the tips according to service quality, the coefficient of SCALED-STD should be negative. This is the case in the US and in the combined samples when SERVCHAR is the dependent variable, but not in the other regressions, and the coefficient is never statistically significant. This suggests that the desire to be able to tip more for better service does not seem to be the main reason why people prefer tipping to service charges.

A third question is whether people who indicate more reasons for tipping have stronger preference to preserve tipping. At the national level, the comparison between the US and Israel indicated that the opposite is true – in the US more reasons for tipping are indicated on average, but preference for tipping over service charges is stronger in Israel. At the individual level, however, the negative (and statistically significant at the 5% level) coefficient of REASONS-TIPPING indicates that people who choose more reasons for tipping are more likely to prefer tipping to service charges. On average, each additional reason for tipping reduces the probability that the respondent prefers service charges to tipping by 6.7% / 2 = 3.4% (see footnote 21).

Instead of looking at the total number of reasons for tipping, we can also examine the various reasons separately. It turns out that none of the reasons in statistically significant at the 10% level, except for GRATITUDE, which is statistically significant at the 1% level in all regressions except the one limited to the US sample. A person who indicates that he tips in order to show his gratitude (among other reasons), is on average about 14% more likely to prefer tipping to service charges than someone who does not indicate showing gratitude as a reason for tipping. This is an interesting result that is consistent with what we might expect. The other reasons for tipping justify tipping as long as it

is the norm; once service charges replace tipping, these reasons are no longer relevant. If service charges are used and tips are not expected, people should not feel guilty or embarrassed if they do not tip, waiters will no longer depend on tips or give bad future service to someone who does not tip, etc. So a person who indicates these reasons for tipping might still prefer canceling tipping altogether. However, a person who tips because he wants to show his gratitude, will no longer be able to show gratitude when the tip becomes a compulsory service charge. It therefore makes sense for such a person to prefer tipping, which is reflected in the negative coefficient of GRATITUDE.

7. Conclusion

The article reports the results of a survey (combined with an experiment) about tipping motivations and behavior. Various conclusions are drawn about tipping behavior throughout the analysis. Here I summarize only a subset of those conclusions. The three most important reasons for tipping are showing gratitude, conforming to the social norm, and supplementing waiters' income since they depend on tips. These three are all positive reasons in the sense that they provide a kind of positive psychological utility when one tips. The other four reasons, which are negative consequences of not tipping, turn out to be less important motivations for tipping. Avoiding feelings of guilt and embarrassment are the two more important reasons among these four, while preventing bad future service and being yelled at by the waiter are the least important reasons for tipping. Interestingly, these two last reasons are the only ones that are consistent with the neo-classical economic agent ("Homo Economicus"), who does not derive psychological utility or disutility from positive or negative feelings. Thus, the results reinforce the view that tipping is inconsistent with Homo Economicus, and that in order to explain tipping we should allow the agents in economic models to have psychological and social motivations. While this article studies tipping, the impact of such psychological and social motivations on economic behavior seems to be important in other contexts as well (e.g., in gift giving and donations).

The treatments of group size (whether dining alone or with a friend) and patronage frequency (one-time, monthly, or weekly) had no systematic and significant effect on either the average amount tipped or the sensitivity of tips to service quality. This suggests that the pressure to tip caused by other diners in the table is not stronger than the pressure to tip one feels when he is alone, and that future service considerations are not an important motivation for tipping. In addition, the failure to replicate the finding of a few previous studies about positive relationship between patronage frequency and tips, supports the idea that this relationship might be the result of both variables being positively correlated with the tipper's income, which was not controlled for in these studies (this problem does not exist in the study reported here because the assignment of treatments to subjects was random).

Respondents in the survey indicated that they tip much more for excellent service than for poor service. This result supports the findings of the survey by Bodvarsson and Gibson (1999), but not those of studies that interview diners as they leave a restaurant, which usually find that improved service increases tips relatively little. The significant difference between the results obtained by these two methodologies is puzzling and it calls for further research that might shed light on what causes this difference.

People indicate that the main reasons why they tip more for better service are that it is more fair and that they want to show gratitude in proportion to how grateful they actually are. Providing incentives for good future service is ranked third, and the social norm being to tip more for better service is the least popular reason. This shows that the reason that is consistent with Homo Economicus – providing incentives for good future service – is not the main reason for the sensitivity of tips to service quality. Interestingly, the tips of people who indicated more reasons for tipping are less sensitive to service quality than those of others. People who tip because tipping is a social norm or due to the low wages of waiters are varying their tips based on service quality less than the average person. On the other hand, those who tip to show their gratitude or to improve future service adopt a large sensitivity of tips to service quality.

In an examination of the preference between tipping and fixed-percentage service charges, most people prefer tipping. This raises doubts whether European establishments that switched from tipping to service charges and US restaurants that impose gratuities on large groups made smart decisions. The preference between tipping and service charges is not significantly related to how much the person tips on average or to what extent his tips are sensitive to service quality. At the individual level, people who indicate more reasons for tipping are also more likely to prefer tipping to service charges. At the national level, however, the opposite is true: US respondents indicate more reasons for tipping, but Israelis have a stronger preference for tipping over service charges. People who indicate showing gratitude as a reason for tipping are especially likely to prefer tipping to service charges.

Finally, the limitations of the study should be pointed out, in order to correctly assess the results and to propose how future research might proceed. One limitation is that all subjects are either students or young people. It is interesting to explore whether the results are robust also when studying customers of different ages. Other limitations have to do with the context and countries of this study. It deals only with restaurant tipping, and was conducted in only two countries. Even though restaurant tipping is larger than tipping in other industries and in the US tips are higher than in other countries, studies of other industries and countries in which tipping is common can still provide an important contribution and help to determine whether the results reported here carry over to additional industries and countries.

Another limitation of this study is the hypothetical nature of the survey. This is relevant with respect to question 4 in the survey (how much people tip in various circumstances and for different quality levels).[23] It is possible that the real tipping behavior of people is somewhat different from their

[23] Asking for the responder's motivations for tipping (questions 2 and 5) or for his preferences between tipping and service charges (question 3) has to involve hypothetical questions, but obtaining tipping behavior (question 4) can also be done by asking customers as they leave a restaurant about their dining experience. It should be pointed out, however, that even this latter methodology does not provide financial incentives to the responders to report their experience truthfully. For

responses to hypothetical questions. This also applies to the experimental manipulations. It is possible that describing in the scenario dining with a friend, for example, does not create the same effect as dining with a friend in practice (e.g., in terms of the social pressure to tip). Similarly, the manipulation of the patronage frequency may not be as effective as taking subjects who actually visit a certain restaurant with different frequencies. On the other hand, the hypothetical nature of the survey also provides certain advantages over studies that ask the subject about one particular dining experience; for example, it allows to ask the subject how much he tips for different service quality levels and not only for the service quality in one specific evening. It also allows to overcome the problems related to the correlation between the tipper's income and his tipping behavior, which were discussed above.

As a result, the best approach to studying tipping is to conduct both types of research – employing hypothetical scenarios and asking about specific real experiences – in order to enjoy the advantages of both methodologies and to verify the robustness of the results. In particular, a worthwhile idea for future research is to interview customers as they leave a restaurant and combine questions 2, 3, and 5 in this survey with questions about their actual tipping in the restaurant. Such a study may help us realize whether the results obtained here about the relationship between tipping behavior (question 4) and tipping motivations and preferences (questions 2, 3, and 5) are influenced by the methodology of eliciting tipping behavior – hypothetical questions versus real tipping.

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example, a customer who did not tip may report that he tipped, or report that service was poor even when service was good, because he feels uncomfortable to report not tipping for good service.

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Appendix: Questionnaire*

The following questionnaire is part of my study on tipping behavior. I would be grateful if you could answer it for me. Participation is voluntary. The questions have no right or wrong answers.

1. When you go to restaurants and you are the person who pays the bill (or part of it), do you tip? □ Yes □ No

2. If your answer to question 1 was "Yes," why do you tip? (Mark every answer that is true for you):
□ I feel guilty if I don't tip.
□ I feel embarrassed if I don't tip.
□ Tipping in restaurants is the social norm in the US.
□ By tipping I can show the waiter my gratitude for his service.
□ Waiters get low wages and depend on my tips to supplement their income.
□ If I won't tip, I will get poor service the next time I go to the same restaurant.
□ If I won't tip, the waiter may yell at me.

3. Do you prefer that the restaurant will add a service charge of 15% to the bill **instead** of tipping?
□ Yes □ No □ I am indifferent between the two

4. Suppose that you dine [with a friend / alone] at a restaurant [in a town you will never come back to / you go to once every month / you go to once every week], and [your part of the bill / your bill] is $10. How much will you tip in dollars (not including the bill itself) for each of the quality levels (Q) below, when 1 is poor service and 5 is excellent service?

Q=1: $_____
Q=2: $_____
Q=3: $_____
Q=4: $_____
Q=5: $_____

5. If you tip more when you get better service, why do you do so? (Mark every answer that is true for you)
□ Because it is more fair that the waiter will get a higher tip when service is better rather than a constant tip regardless of service.
□ To teach the waiter that his tip depends on the service, and thus to give him incentives to give me good service in the future.
□ To show gratitude in proportion to how grateful I actually am.
□ Because the social norm is to tip more for better service.

Thank you very much for your help!

** In question 4, the brackets indicate the alternative wording in the various treatments of this question.*

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Table 1: Reasons for Tipping

	Reasons for tipping	US	Israel	Ratio US/Israel	p-value of χ^2 test
1	Guilt	60.2%	13.3%	4.53	<0.0001
2	Embarrassment	44.1%	23.2%	1.90	<0.0001
3	Social norm	84.7%	58.1%	1.46	<0.0001
4	Gratitude	67.8%	68.9%	0.98	0.8356
5	Waiters depend on tips	66.9%	32.4%	2.06	<0.0001
6	Future service	13.6%	2.5%	5.44	0.0003
7	Risk of yelling	4.2%	0.0%	∞	0.0013
	Total number of reasons	3.42	1.98	1.73	
	P = Average for positive reasons (3,4,5)	73.1%	53.1%	1.38	
	N = Average for negative reasons (1,2,6,7)	30.5%	9.8%	3.13	
	Ratio P/N	2.40	5.45	0.44	
	Number of observations	118	241		

The upper lines in the table present the percentage of respondents who indicated each reason as a reason why they tip. Subjects could mark as many answers as they felt applied to them. The p-value of χ^2 test is the test for difference between the US and Israel (N = 359, d.f. = 1).

Table 2: Average Tipping Percentages

Treatment	US	Israel
Dining alone, one-time visit	15.7% (3.7%)	12.2% (4.9%)
Dining alone, monthly visit	17.0% (4.7%)	14.3% (5.8%)
Dining alone, weekly visit	16.4% (4.1%)	11.1% (4.9%)
Dining with a friend, one-time visit	17.6% (5.8%)	12.6% (4.9%)
Dining with a friend, monthly visit	15.2% (3.0%)	13.4% (3.8%)
Dining with a friend, weekly visit	15.9% (5.9%)	12.8% (3.9%)
Aggregate results		
Dining alone, all patronage frequencies	16.4% (4.2%)	12.6% (5.3%)
Dining with a friend, all patronage frequencies	16.3% (5.1%)	12.9% (4.2%)
Dining alone or with a friend, one-time visit	16.8% (5.0%)	12.4% (4.9%)
Dining alone or with a friend, monthly visit	16.2% (4.0%)	13.8% (4.9%)
Dining alone or with a friend, weekly visit	16.2% (4.9%)	12.1% (4.4%)
All treatments together	16.4% (4.6%)	12.8% (4.8%)

The cells report the average tipping percentage in the corresponding treatment (or treatments) and sample, with standard deviations reported in parentheses. Each treatment has about one sixth of the observations in the sample and so the number of observations in each treatment is omitted to conserve space.

Table 3: Explanation of Variables

Variable	Explanation
AVGTIP	Average percentage tip (averaged over the five quality levels). 15% is coded as AVGTIP = 15 (not 0.15)
REASONS-TIPPING	The number of reasons for tipping marked in question 2
ALONE	A dummy variable, equal to 1 for the dining-alone treatment
MONTHLY	A dummy variable, equal to 1 for the monthly patronage frequency treatment
WEEKLY	A dummy variable equal to 1 for the weekly patronage frequency treatment
SERVCHAR	Preference between service charges and tipping (question 3): -1 if the subject prefers tipping, 0 if he is indifferent, and 1 if he prefers service charges
ISRAEL	A dummy variable, equal to 1 for respondents in Israel
GUILT, EMBARRASSMENT, NORM, GRATITUDE, WAITERS-DEPEND, FUTURE-SERVICE, YELLING	Dummy variables that are equal to 1 if the respective reason is marked in question 2
TIP_q (q = 1…5)	The tip percentage given for service quality q
STD	The standard deviation of (TIP_1, TIP_2, TIP_3, TIP_4, TIP_5)
RANGE	The range between tips for the best and worst service = TIP_5 – TIP_1
SCALED-STD	STD / AVGTIP
SCALED-RANGE	RANGE / AVGTIP
SEN_FAIRNESS, SEN_INCENTIVES, SEN_GRATEFUL, SEN_SOCIAL-NORM	Dummy variables that are equal to 1 if the respective reason is marked in question 5 (SEN is shorthand for "sensitivity," indicating that these are reasons for the sensitivity of tips to service quality)
SERVDUMMY	A dummy variable, equal to 1 if the respondent prefers service charges and to 0 if he prefers tipping; indifferent respondents are excluded from the analysis

Table 4: Regression Analysis of Average Tips

Independent variable	US	Israel	Combined	US	Israel	Combined
Constant	14.98*** (10.92)	11.49*** (13.59)	14.53*** (15.46)	13.95*** (9.00)	11.62*** (12.76)	14.4*** (14.85)
REASONS-TIPPING	0.47 (1.48)	0.59** (2.18)	0.53*** (2.59)			
ALONE	0.07 (0.09)	-0.35 (-0.57)	-0.20 (-0.40)	0.02 (0.03)	-0.49 (-0.80)	-0.26 (-0.52)
MONTHLY	-0.60 (-0.57)	1.53** (2.08)	0.87 (1.44)	-0.51 (-0.46)	1.35* (1.83)	0.77 (1.26)
WEEKLY	-0.55 (-0.51)	-0.19 (-0.26)	-0.29 (-0.47)	-0.61 (-0.56)	-0.12 (-0.16)	-0.30 (-0.49)
SERVCHAR	-0.38 (-0.68)	0.28 (0.67)	0.08 (0.23)	-0.43 (-0.77)	0.40 (0.94)	0.18 (0.54)
ISRAEL			-2.88*** (-4.72)			-2.98*** (-4.57)
GUILT				0.35 (0.35)	0.20 (0.21)	0.46 (0.68)
EMBARRASSMENT				-0.21 (-0.21)	0.04 (0.05)	-0.01 (-0.01)
NORM				2.16* (1.69)	-0.54 (-0.85)	-0.02 (-0.04)
GRATITUDE				1.82* (1.81)	1.13* (1.66)	1.33** (2.38)
WAITERS-DEPEND				-0.64 (-0.67)	1.98*** (3.00)	1.26** (2.33)
FUTURE-SERVICE				-0.81 (-0.58)	2.30 (1.11)	0.45 (0.39)
YELLING				-0.86 (-0.38)	Dropped (always 0)	-0.99 (-0.45)
R^2	0.03	0.05	0.14	0.09	0.09	0.16
Observations	116	238	354	116	238	354

The table presents the coefficients of the variables in a regression where the dependent variable is the average tip in percentage of the bill (AVGTIP); t-values are reported in parentheses. * Indicates statistically significant at the 10% level; ** indicates statistically significant at the 5% level; *** indicates statistically significant at the 1% level (significance levels are two-tailed).

Table 5: Sensitivity of Tips to Service Quality

Variable	US (N = 117)	Israel (N = 238)
TIP_1	8.7% (5.4%)	6.2% (5.3%)
TIP_2	12.5% (4.7%)	8.9% (5.0%)
TIP_3	16.4% (4.9%)	12.1% (4.8%)
TIP_4	19.7% (5.8%)	15.7% (5.9%)
TIP_5	24.5% (7.1%)	21.0% (8.7%)
STD	5.8% (2.7%)	5.5% (3.4%)
RANGE	15.8% (7.8%)	14.8% (9.7%)
SCALED-STD	0.37 (0.20)	0.48 (0.30)
SCALED-RANGE	1.02 (0.56)	1.28 (0.78)

The table reports the averages of the variables, with standard deviations reported in parentheses.

Table 6: Why Do People Tip more for Better Service?

Reason	US (N = 53)	Israel (N = 241)
Fairness	73.6%	61.4%
Providing incentives	39.6%	36.1%
Showing gratitude proportionally	81.1%	54.8%
Social norm	32.1%	6.2%
Total number of reasons	2.26	1.59

The table presents the percentage of respondents who indicated each reason as a reason why they tip more for better service. Subjects could mark as many answers as they felt applied to them.

Table 7: Regression Analysis of Sensitivity of Tips to Service Quality

	Israel	Combined	Combined	Combined	Combined
Dependent variable	SCALED -STD	SCALED-STD	SCALED-RANGE	STD	RANGE
Constant	0.837*** (12.22)	0.785*** (8.96)	1.934*** (8.30)	1.48 (1.41)	2.69 (0.90)
REASONS-TIPPING	-0.037** (-1.99)	-0.033** (-2.24)	-0.079** (-2.03)	-0.43** (-2.42)	-1.10** (-2.21)
ALONE	0.041 (1.16)	0.031 (1.00)	0.061 (0.75)	0.14 (0.37)	0.38 (0.36)
MONTHLY	-0.074* (-1.73)	-0.056 (-1.53)	-0.126 (-1.29)	-0.51 (-1.16)	-1.24 (-1.00)
WEEKLY	-0.035 (-0.80)	-0.037 (-0.97)	-0.091 (-0.91)	-0.58 (-1.28)	-1.51 (-1.18)
SERVCHAR	-0.010 (-0.42)	-0.016 (-0.77)	-0.028 (-0.50)	-0.26 (-1.05)	-0.59 (-0.83)
AVGTIP	-0.026*** (-6.87)	-0.022*** (-6.82)	-0.052*** (-6.06)	0.27*** (6.99)	0.78*** (7.13)
SEN_FAIRNESS	-0.010 (-0.26)	-0.003 (-0.09)	-0.009 (-0.11)	0.20 (0.50)	0.51 (0.45)
SEN_INCENTIVES	0.095** (2.43)	0.071** (2.15)	0.198** (2.25)	0.77* (1.93)	2.10* (1.86)
SEN_GRATEFUL	0.049 (1.23)	0.046 (1.35)	0.176* (1.94)	1.12*** (2.73)	3.42*** (2.95)
SEN_SOCIAL-NORM	-0.066 (-0.86)	-0.015 (-0.27)	-0.075 (-0.53)	-0.54 (-0.84)	-1.54 (-0.85)
ISRAEL		-0.003 (-0.06)	0.029 (0.24)	0.51 (0.91)	1.77 (1.11)
R^2	0.25	0.23	0.20	0.18	0.19
Observations	238	291	291	291	291

The table presents the coefficients of the variables in the regressions; t-values are reported in parentheses.

* Indicates statistically significant at the 10% level; ** indicates statistically significant at the 5% level;

*** indicates statistically significant at the 1% level (significance levels are two-tailed).

Table 8: Regression Analysis of Sensitivity of Tips to Service Quality

	US	Israel	Combined	Combined	Combined	Combined
Dependent variable	SCALED-STD	SCALED-STD	SCALED-STD	SCALED-RANGE	STD	RANGE
Constant	0.671*** (8.24)	0.866*** (12.82)	0.853*** (13.24)	2.197*** (12.66)	3.258*** (4.11)	8.298*** (3.66)
ALONE	-0.016 (-0.47)	0.055 (1.59)	0.036 (1.39)	0.085 (1.21)	0.191 (0.60)	0.578 (0.63)
MONTHLY	0.053 (1.22)	-0.061 (-1.44)	-0.032 (-1.02)	-0.068 (-0.81)	-0.158 (-0.41)	-0.316 (-0.29)
WEEKLY	0.047 (1.10)	-0.020 (-0.48)	-0.008 (-0.25)	-0.022 (-0.25)	-0.239 (-0.61)	-0.565 (-0.50)
SERVCHAR	-0.009 (-0.398)	0.003 (0.11)	-0.006 (-0.31)	-0.004 (-0.07)	-0.117 (-0.54)	-0.161 (-0.26)
AVGTIP	-0.015*** (-3.80)	-0.028*** (-7.49)	-0.024*** (-8.47)	-0.058*** (-7.64)	0.227*** (6.58)	0.650*** (6.60)
GUILT	-0.021 (-0.55)	-0.057 (-1.07)	-0.042 (-1.21)	-0.138 (-1.46)	-0.630 (-1.47)	-1.974 (-1.60)
EMBARRASSMENT	-0.040 (-1.01)	-0.029 (-0.66)	-0.020 (-0.65)	-0.061 (-0.74)	-0.284 (-0.75)	-0.960 (-0.89)
NORM	-0.016 (-0.31)	-0.108*** (-2.98)	-0.090*** (-3.05)	-0.203** (-2.57)	-0.891** (-2.46)	-2.140** (-2.07)
GRATITUDE	0.003 (0.07)	0.090** (2.30)	0.064** (2.18)	0.174** (2.21)	0.752** (2.10)	2.157** (2.10)
WAITERS-DEPEND	-0.089** (-2.36)	-0.045 (-1.18)	-0.066** (-2.35)	-0.171** (-2.26)	-0.900*** (-2.60)	-2.447** (-2.47)
FUTURE-SERVICE	0.121** (2.17)	0.096 (0.81)	0.084 (1.42)	0.241 (1.50)	1.003 (1.37)	2.898 (1.38)
YELLING	-0.025 (-0.29)	Dropped (always 0)	0.008 (0.07)	-0.059 (-0.20)	-0.176 (-0.13)	-0.636 (-0.16)
ISRAEL			-0.042 (-1.20)	-0.120 (-1.28)	-0.299 (-0.70)	-0.934 (-0.76)
R^2	0.22	0.27	0.26	0.23	0.16	0.16
Observations	116	238	354	354	354	354

The table presents the coefficients of the variables in the regressions; t-values are reported in parentheses.

* Indicates statistically significant at the 10% level; ** indicates statistically significant at the 5% level;

*** indicates statistically significant at the 1% level (significance levels are two-tailed).

Table 9: Preference between Tipping and Service Charges

	US (N = 117)	Israel (N = 241)	Combined (N = 358)
Prefer tipping	70 (59.8%)	172 (71.4%)	242 (67.6%)
Indifferent	25 (21.4%)	35 (14.5%)	60 (16.8%)
Prefer service charges	22 (18.8%)	34 (14.1%)	56 (15.6%)
Ratio prefer tipping / prefer service charges	3.2	5.1	4.3

Table 10: Regression Analysis of Preference between Tipping and Service Charges

	US	Israel	Combined	Combined	Combined	Combined
	OLS	OLS	OLS	OLS	OLS (LPM)	Probit
Dependent variable	SERVCHAR	SERVCHAR	SERVCHAR	SERVCHAR	SERVDUMMY	SERVDUMMY
Constant	0.176 (0.39)	-0.554** (-2.46)	-0.257 (-1.10)	-0.125 (-0.56)	0.301** (2.22)	-0.446 (-0.83)
AVGTIP	-0.016 (-0.87)	0.011 (1.01)	0.004 (0.43)	-0.001 (-0.08)	0.000 (0.09)	-0.000 [-0.000] (-0.01)
SCALED-STD	-0.235 (-0.55)	0.035 (0.19)	-0.040 (-0.24)	-0.130 (-0.80)	0.041 (0.45)	0.111 [0.028] (0.31)
GUILT	-0.038 (-0.22)	0.060 (0.41)	0.011 (0.10)		0.036 (0.59)	0.126 [0.033] (0.53)
EMBARRASSMENT	-0.059 (-0.35)	0.011 (0.10)	-0.016 (-0.18)		0.010 (0.19)	0.004 [0.001] (0.02)
NORM	0.059 (0.26)	0.051 (0.51)	0.035 (0.38)		0.041 (0.78)	0.161 [0.040] (0.79)
GRATITUDE	-0.074 (-0.42)	-0.318*** (-3.05)	-0.254*** (-2.85)		-0.144*** (-2.83)	-0.516*** [-0.144] (-2.74)
WAITERS-DEPEND	-0.273 (-1.63)	0.007 (0.07)	-0.064 (-0.73)		-0.056 (-1.10)	-0.208 [-0.052] (-1.05)
FUTURE-SERVICE	-0.186 (-0.78)	-0.473 (-1.48)	-0.260 (-1.43)		-0.146 (-1.46)	-0.691 [-0.128] (-1.48)
YELLING	0.236 (0.61)	Dropped (always 0)	0.218 (0.63)		0.142 (0.78)	0.433 [0.131] (0.71)
REASONS-TIPPING				-0.067** (-2.05)		
ISRAEL			-0.170 (-1.60)	-0.250** (-2.52)	-0.076 (-1.22)	-0.311 [-0.084] (-1.29)
R^2	0.05	0.05	0.05	0.02	0.06	Pseudo R^2 = 0.06
Log likelihood						-134.1
Observations	116	238	354	354	296	296

The table presents the coefficients of the variables in the regressions; t-values are reported in parentheses.

* Indicates statistically significant at the 10% level; ** indicates statistically significant at the 5% level; *** indicates statistically significant at the 1% level (significance levels are two-tailed). In the probit regression, the numbers in brackets report the change in the probability (of SERVDUMMY being equal to 1) for an infinitesimal change in each continuous variable and the discrete change in the probability for dummy variables. These marginal effects are estimated at the sample means.